501652

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
31 July 2003 (31.07.2003)

PCT

(10) International Publication Number
WO 03/063368 A2

(51) International Patent Classification[7]: H04B

(21) International Application Number: PCT/US03/02003

(22) International Filing Date: 22 January 2003 (22.01.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/350,575 22 January 2002 (22.01.2002) US

(71) Applicant *(for all designated States except US)*: **BAE SYSTEMS INFORMATION AND ELECTRONIC SYSTEMS INTEGRATION INC.** [US/US]; P.O. Box 868, NHQ01-719, 65 Spit Brook Road, Nashua, NH 03061-0868 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **KOMIAK, James, J.** [US/US]; 6 Farmers Road, Merrimack, NH 03054 (US). **BARNUM, Danny, A.** [US/US]; 17 Four Winds Road, Merrimack, NH 03054 (US). **MARON, David, E.** [US/US]; 1 Draycoach Ct., Merrimack, NH 03054 (US).

(74) Agent: **LONG, Daniel, J.**; Bae Systems Information and Electronic Systems Integration Inc., P.O. Box 868, NHQ01-719, 65 Spit Brook Road, Nashua, NH 03061-0868 (US).

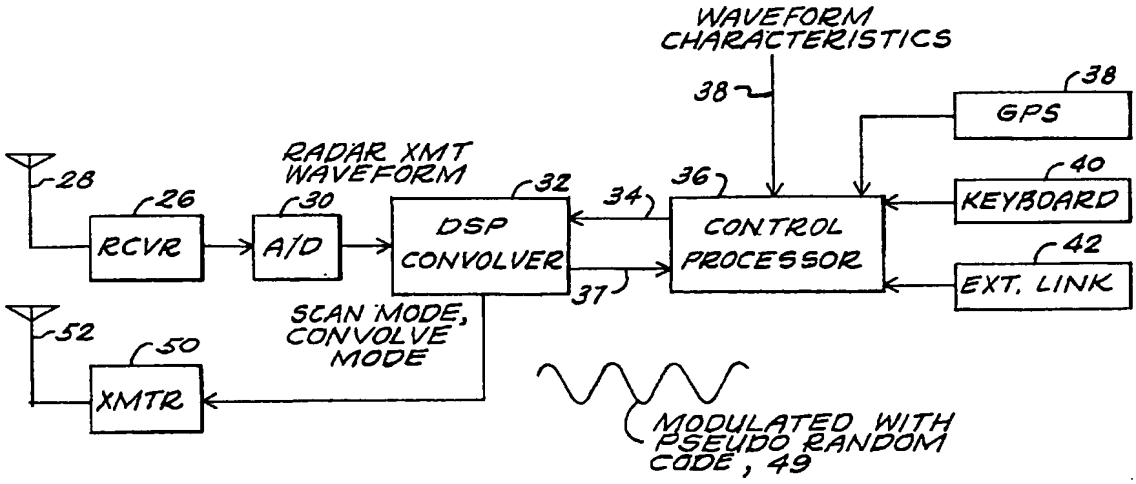
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**
— *without international search report and to be republished upon receipt of that report*

*[Continued on next page]*

(54) Title: DIGITAL RF TAG




(57) Abstract: An RF tag is provided to communicate with an interrogating source in which the tag has programmability and flexibility to uplink data to multiple platforms. As such the RF tag functions as a miniature programmable transceiver capable of communicating with a plurality of different platforms each having different waveform characteristics. With well-controlled spectral characteristics due to stored waveforms and the use of specialized direct digital up and down conversion techniques, data rates up to 256 kbps are achievable. The tag is thus capable of converting microwave signals directly to digital inputs, and the transmitter generates microwave signals directly from digital outputs. Flexible digital processing also allows a throughput of 900 BOPS when using field programmable gate arrays.

WO 03/063368 A2